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12 Lessons learned from the management of the coronavirus pandemic



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ARTICLE INFO

Article history:

Received 30 April 2020

Accepted 5 May 2020

Keywords:

Covid-19

Pandemic

Policy responses

Policy-making

ABSTRACT

The Coronavirus SARS-CoV-2 has spread rapidly since the first cases hit Wuhan, China at the end of 2019, and has now landed in almost every part of the world. By mid-February 2020, China, South Korea, Singapore, Taiwan, and – to some extent – Japan began to contain and control the spread of the virus, while conversely, cases increased rapidly in Europe and the United States. In response to the pandemic, many countries have had to introduce drastic legally mandated lockdowns to enforce physical separation, which are ravaging economies worldwide. Although it will be many months or even years before the final verdict can be reached, we believe that it is already possible to identify 12 key lessons that we can learn from to reduce the tremendous economic and social costs of this pandemic and which can inform responses to future crises. These include lessons around the importance of transparency, solidarity, coordination, decisiveness, clarity, accountability and more.

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1. Introduction

The Coronavirus SARS-CoV-2 has spread rapidly since the first cases in Wuhan, China at the end of 2019, now reaching almost every part of the world. By mid-February 2020, China, South Korea, Singapore, Taiwan, and – to some extent – Japan began to contain and control the spread of the virus, while conversely, cases increased rapidly in Europe and the United States. On March 13th, the WHO Director General declared Europe as the epicentre of the pandemic “with more reported cases and deaths than the rest of the world” [1], but by the end of the month that label had shifted to New York. Health workers around the world have described war-like scenes as health systems struggle to gain control over the virus. In response to the pandemic, many countries have introduced drastic legally mandated lockdowns to enforce physical separation. Although it will be many months or even years before the final verdict can be reached, we believe that it is already possible to identify 12 key lessons that we can learn from to reduce the tremendous economic and social costs of this pandemic and which can inform responses to future crises.

2. Twelve key lessons

2.1. Transparency is vital

“Pneumonia of an unknown cause” was first reported to the WHO Office in China on 31 December 2019 [2]; yet weeks earlier, healthcare professionals had warned Chinese authorities that a SARS-like illness was spreading amongst patients. Instead of notifying those higher in the system, Wuhan authorities detained and silenced physician Dr Li Wenliang on a charge of spreading false rumours after he reported a novel illness in his patients in early December [3]. At age 34, Dr Li passed away in February 2020 from COVID-19 infection [3]. This tragedy highlights the critical importance of honesty and transparency. Modelling data suggests that if action had been taken even a few days earlier, the subsequent spread of the virus could have been limited dramatically. However, fears of economic and political repercussions silenced officials who could have sounded alarms, and the virus was able to spread exponentially. Other countries have also struggled to communicate the epidemiology of this new infection, sometimes reflecting the challenges of ensuring consistent and coherent messaging in a fast moving situation, sometimes due to internal disagreements,⁵ but sometimes, for example in Brazil and the United States, because of blatantly misleading comments [4] by political leaders and the media. These too have consequences. President Trump’s praise for

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hydroxychloroquine, despite an absence of evidence of effectiveness in COVID-19, meant that people who did need it, such as those with lupus, have faced shortages [5]. A lack of transparency around the United Kingdom's scientific advisory mechanism has undermined trust [6].

2.2. Successful responses hinge on decisive leadership

Recognising its initial response errors, China showed leadership in tackling the COVID-19 epidemic within its borders by implementing stringent measures. Through a combination of widespread testing and contact-tracing, legally enforced physical (social) distancing measures, and use of modern technologies such as automated robot cleaners and facial recognition for contact-mapping, China has successfully slowed the spread to a halt: on 19 March 2020 – for the first time since the outbreak began in 2019 – China reported no locally-transmitted incident cases of COVID-19 [7]. Other countries, such as South Korea, have followed suit and have also been relatively successful in controlling spread. Heads of government in countries such as New Zealand, Germany, Finland, Iceland and Taiwan have attracted praise for their decisive action and ability to communicate the rationale for their policies. As commentators have noted, they are all women [8].

2.3. We need unified responses to pandemics rather than diverse disconnected strategies

So far, there has been little evidence of international coordination, worldwide or within regional blocs, as countries close borders and look inwards. WHO has urged countries to implement a comprehensive response to COVID-19 and to “Do it all... Find, isolate, test and treat every case to break the chains of transmission” [9]. Yet countries have moved at different speeds and intensity, often without consulting their neighbours. These responses sometimes seem disconnected from the epidemiological evidence; some countries which have similar disease ‘curves’ are reacting very differently. The strict legally backed lockdown measures implemented in China and South Korea early in their outbreaks contrast with the dismissal of the risks of coronavirus, accompanied, at least initially, by reluctance to impose stringent restrictions by some politicians in the UK and the US. In places with ‘softer’ initial responses (i.e. France, UK) the rapid increase in cases forced reassessments, with adoption of increasingly severe measures to protect health systems at risk of collapse.

Today, over half the world's population faces partial or full lockdown restrictions, and the global economy has taken a devastating hit. Coronavirus, like all infectious agents, ignores geopolitical boundaries and attacks people regardless of nationality; we too must take a unified approach which transcends geopolitical boundaries both to tackle the virus and to transition out of market closures and lockdowns. As countries consider lifting these measures, they must consult with one another and avoid making decisions in isolation. At the same time, they should also steer away from ‘one fits all’ solutions, and governments must consider their domestic cultures and contexts before ultimately defining a ‘new normal’. The European Union has published a roadmap setting out the principles that should underpin decisions to open up, noting that health policy is a national competence, but decisions should be discussed and communicated with neighbouring member states [10].

2.4. Effective communication must occur at the highest political levels

In recent decades, the world's leading economies have created structures to allow coordination of policies, including the G7 and G20. There has been a disappointing lack of communication and

collaboration at the highest political levels. The first virtual G7 and G20 meetings did not occur until mid-March – months after the outbreak began in China. And even when these discussions did take place, consensus lacked on a unified approach to COVID-19. When the G7 met on 25 March, instead of agreeing upon coordinated and collaborative responses to the virus, disputes broke out about who was most to blame for the crisis and a post-meeting joint statement could not be put together [11]. Subsequently, the USA blocked a statement by the G20 re-emphasising the global leadership role of WHO [12]. In this, and in future epidemic and pandemic responses, policymakers at the highest level need to engage with each other early on to develop coherent and unified responses. They must then communicate these to citizens, using every forum available.

2.5. The European Union, and other regional blocs, must assume a greater health role

The current pandemic response has revealed serious obstacles to concerted European Union action. Many European countries responded late to the disease outbreak, and going forward, several changes are needed. With treaties prohibiting ‘interference’ with member States’ autonomy in operation of their own health systems, the crisis has laid bare the limited competencies in health that member States have been willing to give their European institutions [13]. Additionally, the European Centre for Disease Prevention and Control (ECDC) “has limited remit beyond the borders of the European Economic Area (EEA)” and there are legal barriers to sharing public health data with countries, such as Switzerland, that have decided to remain outside the EU's legal framework [13,14]. Going forward, the role of the ECDC must be extended and enhanced with more funding for research and development (R&D) and prevention efforts so that it can provide truly European (and not just EEA) coordinated disease responses, working closely with the European Regional Office of WHO. COVID-19 will have major impacts on all European economies and the European Central Bank (ECB) will need to play a new role that goes beyond its traditional jurisdiction.

Yet the EU is only one regional bloc. Others, such as ASEAN, CARICOM, and MERCOSUR are, to varying degrees, increasing their role in health. Given the obvious economic impact of a pandemic, this will have to accelerate.

2.6. Global solidarity is the only way to win the war against COVID-19

Every country is making efforts to tackle COVID-19 and its economic impacts within national borders. However, these efforts are often disparate, and in some instances, even undermine global solidarity. For example, early on in the crisis, it was reported that President Trump offered large sums of money to CureVac, a German firm working on a COVID-19 vaccine, to persuade it to move and give exclusive rights to any vaccine produced to the US [15]. When the outbreak began to ramp up in Europe in March, France and Germany banned the export of protective personal equipment (PPE) amidst severe shortages of such equipment elsewhere [13,16]. China, after having weathered the worst of the outbreak, is one of the few countries showing signs of solidarity and providing support to other countries by donating PPE and lending medical staff, a form of soft power that will not go unnoticed in the future [17]. More of these coordinated responses are the only way to defeat and transition out of a pandemic which cuts across national borders.

2.7. The WHO has done a lot given the resources it has, but there is much room for improvement. It must now focus its activities, expand its remit and enhance its operational capacity

The WHO has continued to make use of available information throughout the different stages of the COVID-19 pandemic, but its experience has highlighted the need for greater focus, a wider remit and greater operational capacity. Based on what is often inadequate and uncertain data, the organisation has the difficult task to inform populations of the spread and severity of SARS-CoV-2, while simultaneously mitigating panic that could send economies into recession and even depression. Thus far, the WHO has done its best to communicate its messages effectively and has carefully escalated the terminology around SARS-CoV-2 from outbreak, to epidemic, and to pandemic, based on available evidence. While these efforts are commendable, the pandemic has highlighted the need for some refocusing and increased funding to ensure the WHO is capable of coordinating global responses to major health challenges, including the capacity to provide even greater operational support where this is needed. However, it now faces enormous challenges as a consequence of President Trump's widely condemned decision to defund it [18].

2.8. Existing global insurance institutions and policies are inadequate, and these require significant changes and improvements

While several health security funds exist, these remain disappointingly inadequate. In 2016, the World Bank established the Pandemic Emergency Financing Facility (PEF) to complement the already-existing UN Central Emergency Relief Fund (CERF) and the WHO's Contingency Fund for Emergencies (CFE). PEF was designed to release funds to countries and companies responding to pandemic outbreaks [19]. Yet, in reality, it is underpinned by bonds with complex terms that are "heavily skewed towards investors", with a failure to pay countries affected in a timely fashion (if at all) [19,20]. While the global security space is crowded with insurance schemes, none have proved to be adequate. Any new global insurance policy must learn lessons from this experience to allow rapid disbursement of funds to those who actually need them.

2.9. Efforts to develop COVID-19 vaccines and treatments are commendable, but there is still much more to do

Countries and individuals around the globe are working to develop and manufacture vaccines and treatments for coronavirus in an unprecedented way. Across government, private and philanthropic donor spend, billions of dollars are being put towards efforts to find an effective SARS-CoV-2 vaccine [21,22]. There are over 115 COVID-19 vaccine candidates in varying stages of R&D, and the number of clinical trials of potential COVID-19 treatments and interventions has surpassed 500 [23,24]. While of course, we commend the commitment shown thus far, the global approach towards how we develop and test these vaccines needs to shift. We believe the quickest path to successful development will entail well-organised, mid- to large-size clinical trials rather than the rushed, small clinical trials that have failed to deliver so far.

Furthermore, once a vaccine is developed, the success of any COVID-19 exit strategy will depend on the distribution of this technology quickly to those most in need. But currently, manufacturing and distribution channels do not have the capacity to provide access to the billions of people who will require this vaccine [25]. We therefore suggest that governments jointly purchase the patent rights to these developments which would simultaneously reward developers for their innovation, investment, and efforts, while also

allowing countries to rapidly manufacture and equitably distribute the vaccines to all those in need in their populations.

2.10. We need to test the responsiveness and resilience of health systems and make changes and improvements based on the results

Financial institutions are regularly stress tested; a lesson learned after the 2008 economic crisis. Yet while health systems are essential to human wellbeing (as evidenced by the COVID-19 pandemic), the responsiveness and resilience of health systems to epidemics and pandemics are rarely tested. Thus, as SARS-CoV-2 has spread across the world, health systems have been shocked and found underprepared: countries such as the US, which relies on China for the manufacture of over two thirds of the active pharmaceutical ingredients used in the American generics market [26], are highly dependent on well-functioning supply chains and face threats of drug shortages when manufacturers elsewhere are unable to do their jobs because of lockdowns and quarantines. Crucially, if systems are tested and weaknesses identified, something must be done. Unfortunately, this often does not occur in practice. For example, after a major exercise in the UK in 2016 exposed a shortage of ventilators, the issue was ignored [27]. Once the current COVID-19 pandemic is under control, health systems should be tested just like banks are to ensure they are resilient, and that any weaknesses are addressed.

2.11. Accountability is critical for building trust and for sound, inclusive decision making

Those making decisions must be accountable. The data, information, models and the processes by which the decisions are made, and their rationale should be available for scrutiny. Lack of clarity or purposeful obfuscation leads to confusion and sows mistrust, which undermines the response to an epidemic. Unfortunately, some countries are failing to make their data public, or are not sharing the information, models and assumptions on which decisions are made. This 'perceived secrecy' has undermined trust in many leaders. For example, in the UK, age and sex disaggregated data on those infected with SARS-CoV-2 or those who have died from COVID-19 have only recently become available, making it difficult to examine the assumptions used to make decisions.

2.12. There are opportunities to introduce novel approaches, such as using robots and artificial intelligence (AI), in this – and in future – pandemic response

The battle against novel diseases, such as COVID-19, may require novel approaches and technology. Robots and Artificial Intelligence (AI) – immune to infection and able to be coated in decontaminating substances – can play a vital role on the frontlines of this war. Already, we are seeing the deployment of some of these new technologies. For example, in some countries, drones are being used to monitor people in lockdown and to deliver supplies and equipment; in others, robots are screening patients and relieving healthcare workers from some of their duties; furthermore, robots which deliver food and medicines, and even ones that dance, are offering emotional support and interaction for those in isolation; and lastly, robots with UV units are being used to disinfect hospitals and other large buildings [28]. There is a need to look at all options, while ensuring that they are subject to evaluation.

3. Conclusion

Now that SARS-CoV-2 has become a pandemic with close to five million cases and over 300,000 deaths as a result of the virus, the case for investing in health systems, human resources, and health

technologies is clear. It is also easy to see that in the past decade, austerity policies have cut investments in health and these systems have too often been reduced or ignored. While it is essential to cut waste within health systems, this pandemic highlights the need to have adequate capacity to address and tackle a crisis. It is also a reminder of the strategic importance of publicly accountable health systems, underpinned by investment in people and technologies. We must continue to build upon the lessons learned so far from the management of COVID-19 and adjust our approaches to this pandemic, and to other future health and environmental crises, accordingly.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

None.

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